

Zübeyir Bodur  
21702382

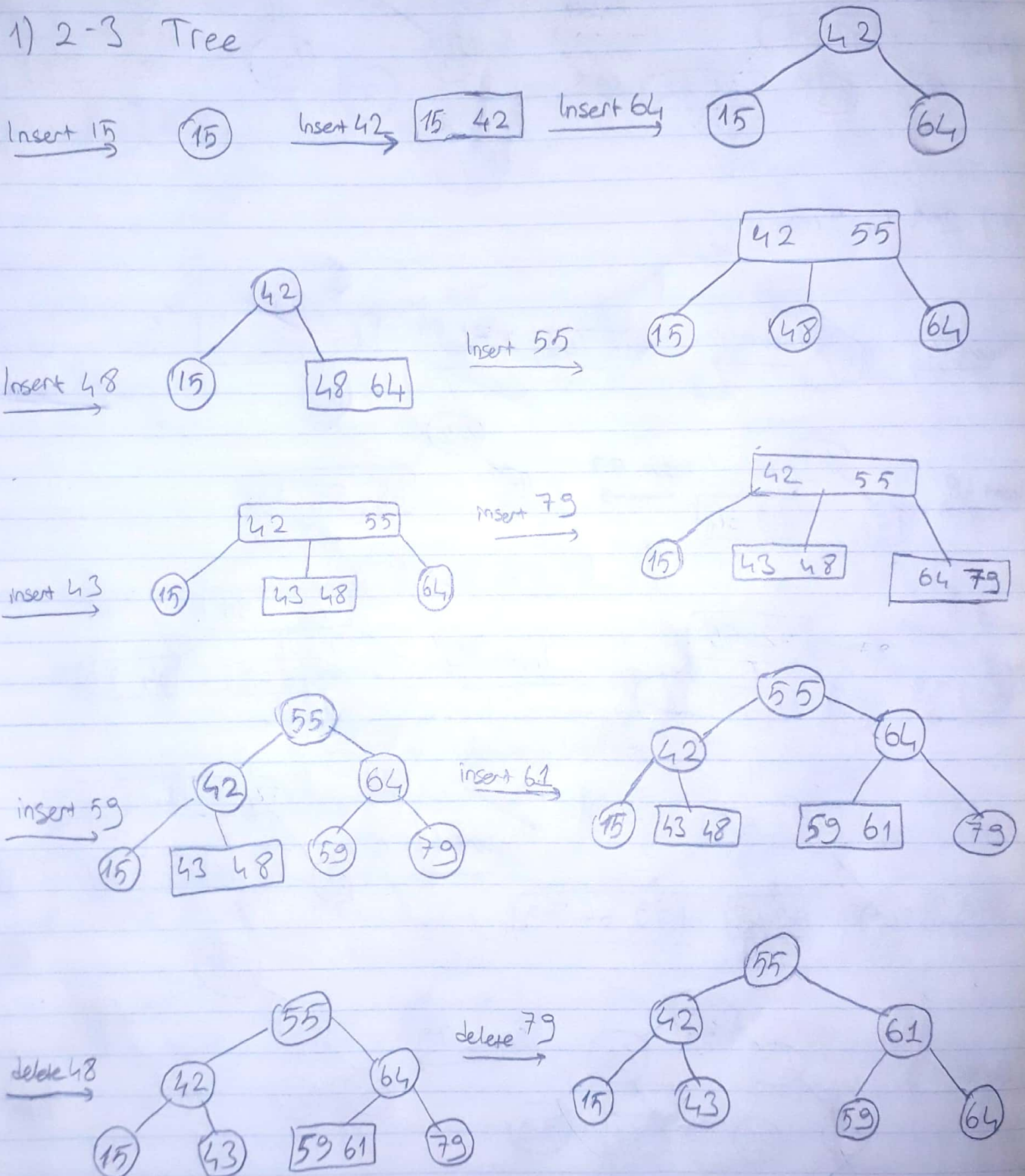
# CS202 HW4

## Questions 142

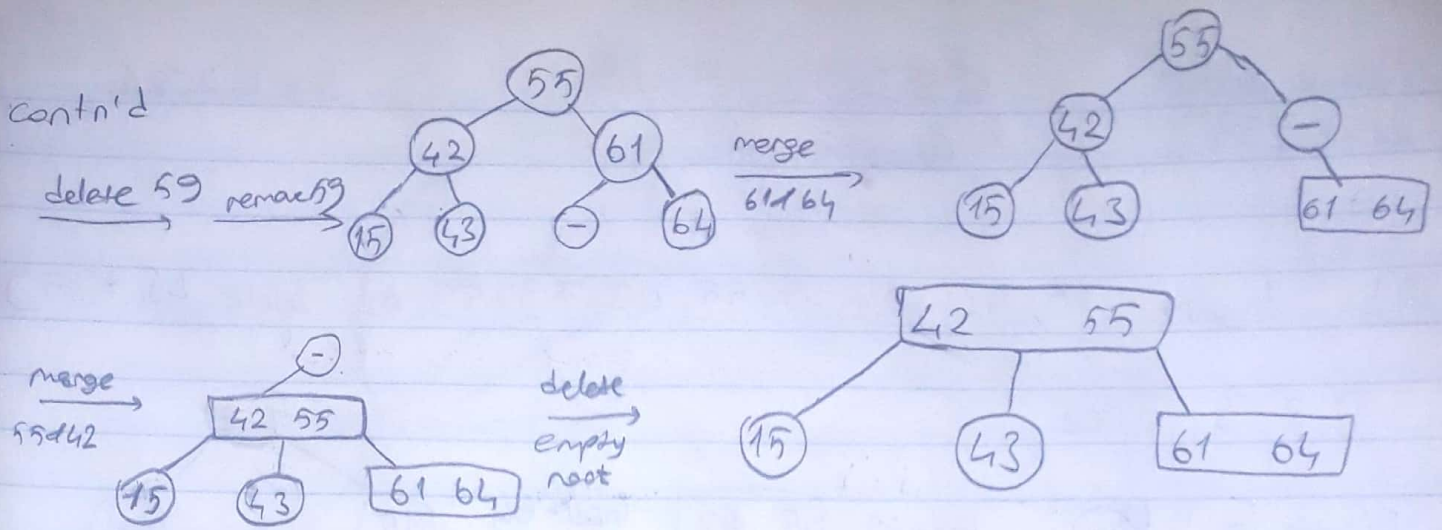
26.4.2021

Q1. Insert 15, 42, 64, 48, 55, 43, 79, 59, 61 delete 48, 79, 59

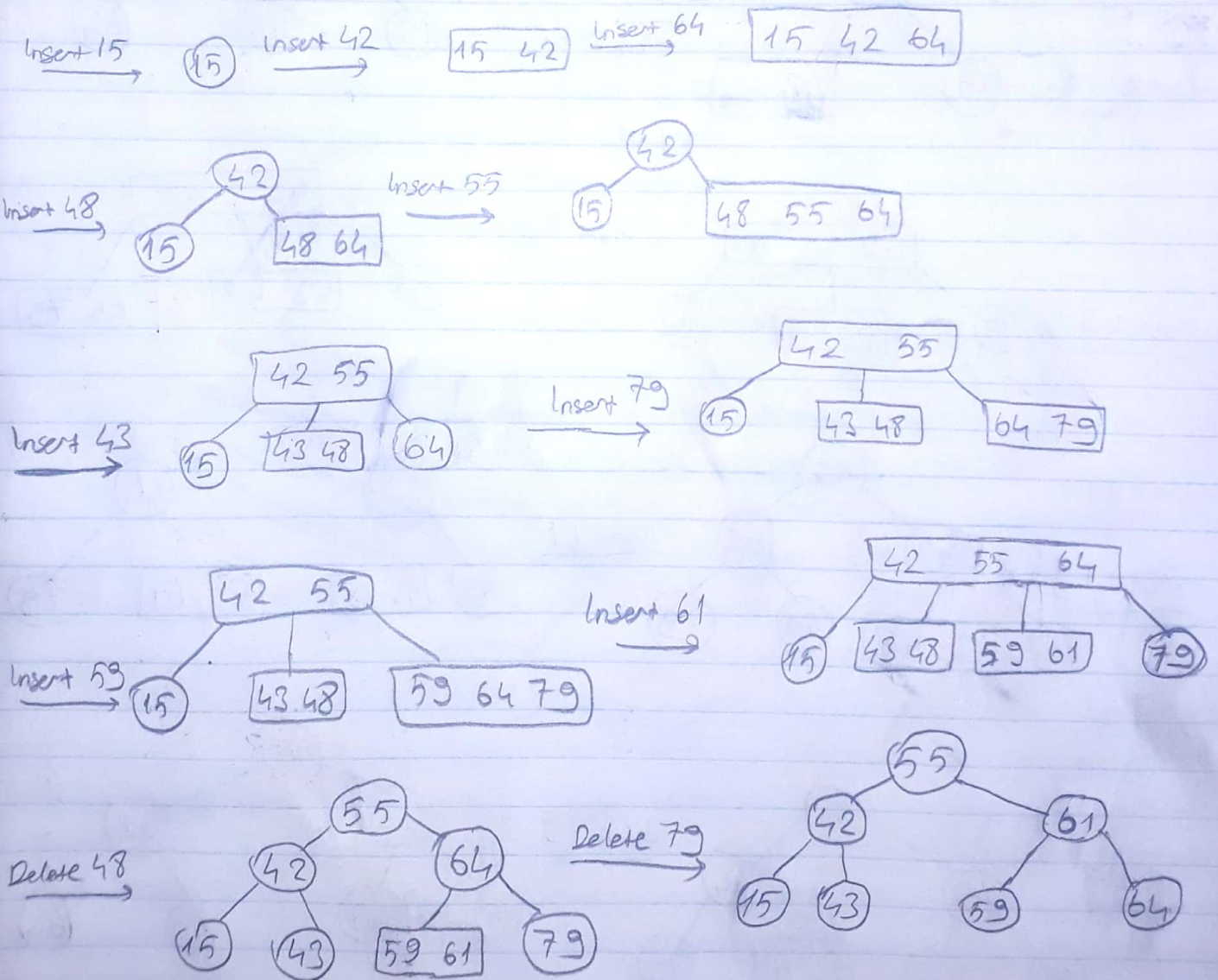
1) 2-3 Tree



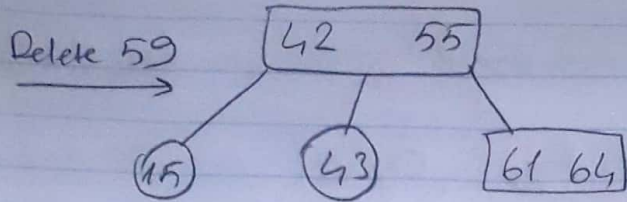
contn'd



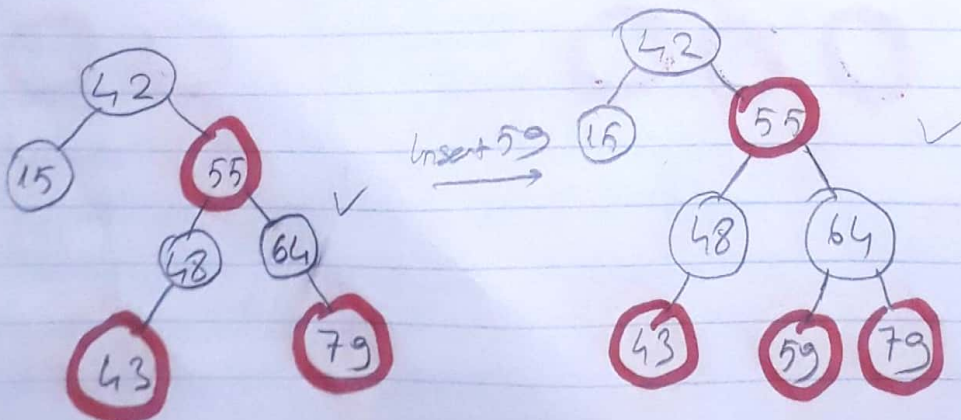
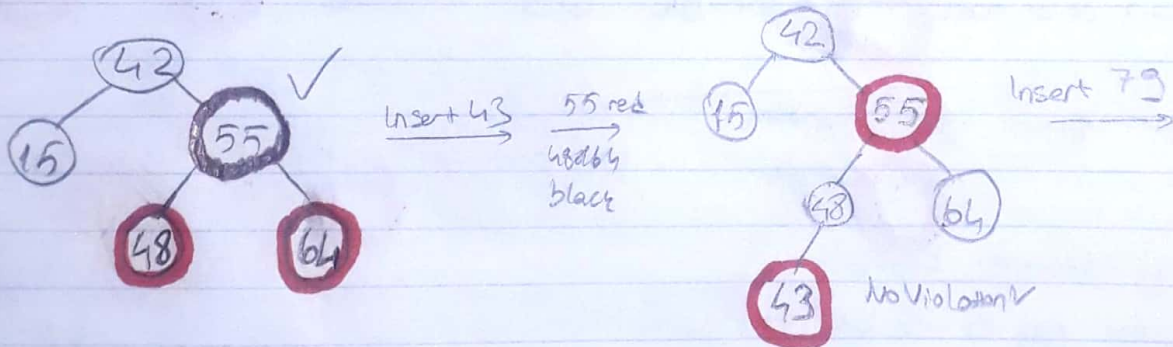
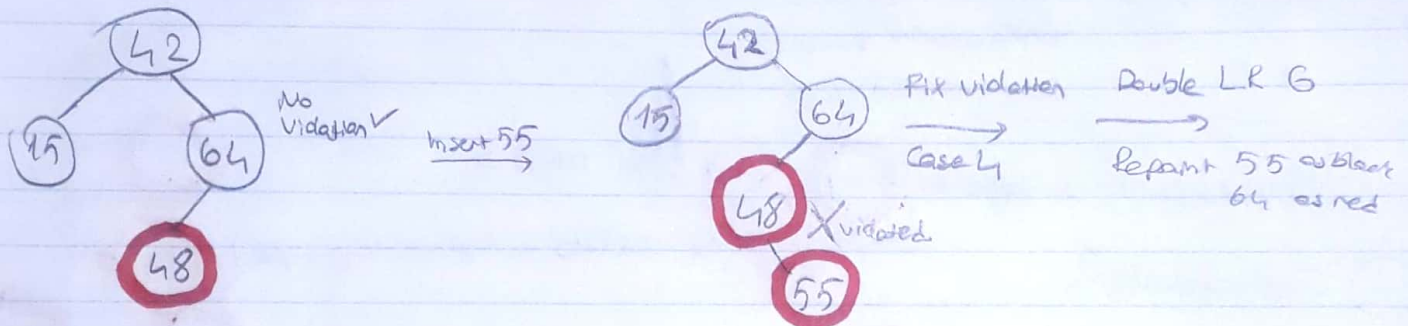
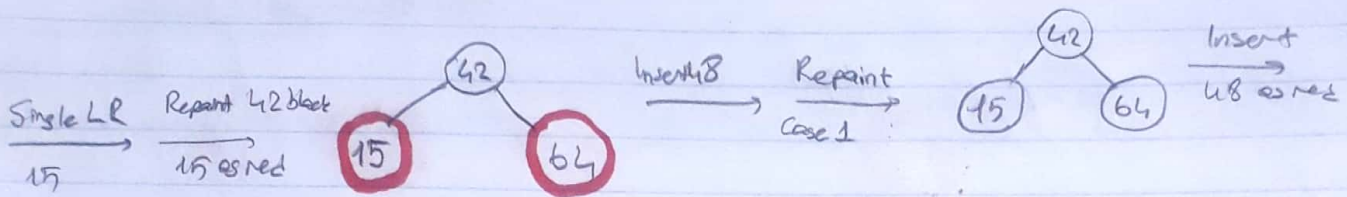
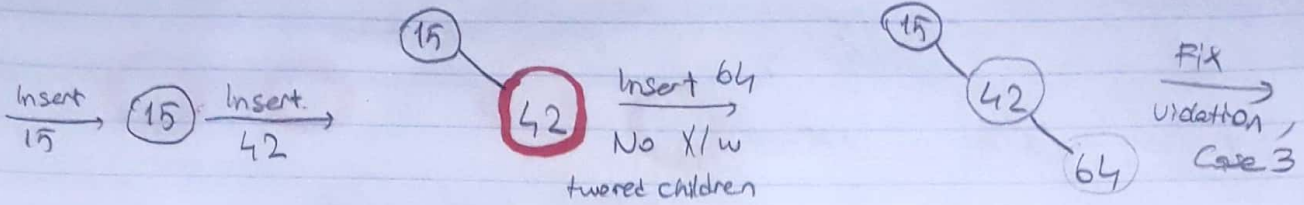
## 2-3-4 Tree





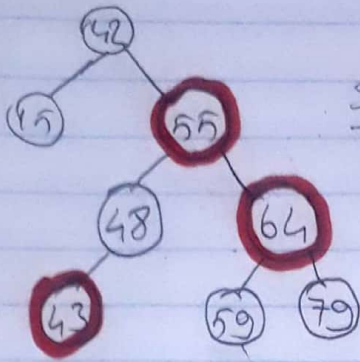


3) RB Tree (show red nodes w/  , black nodes w/  )



Insert 61

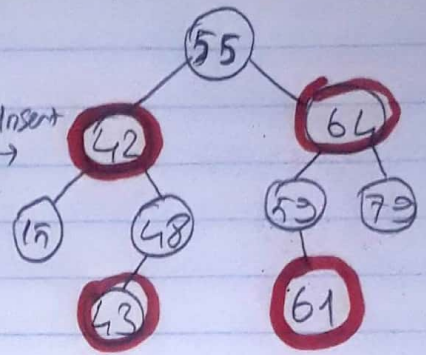
59 & 79  
Case 3



Single LR  
42

Recolor  
55 black  
42 red

Then Insert  
61





Q2: Insert the following into a hash table w/ size 17.

22, 23, 24, 39, 40, 26, 41, 43, 26

1- Linear Probing

					22	23	24	39	40	26	41	43	26			
0	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16

2- Quadratic Probing

26	43				22	23	24	41	39	40		26				
0	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16

3- Separate Chaining

0	
1	
2	
3	
4	
5	→ [22] → [39] X
6	→ [23] → [40] X
7	→ [24] → [41] X
8	
9	→ [26] → [43] → [26] X
10	
11	
12	
13	
14	
15	
16	